

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

Date of mailing (day/month/year) 18 June 2001 (18.06.01)	
International application No. PCT/NL00/00599	Applicant's or agent's file reference P51808PC00
International filing date (day/month/year) 29 August 2000 (29.08.00)	Priority date (day/month/year) 30 August 1999 (30.08.99)
Applicant VOSS, Eckart, Karl, Heinz et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
 29 March 2001 (29.03.01)

☐ in a notice effecting later election filed with the International Bureau on:  
 \_\_\_\_\_

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Olivia TEFY
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 5 902 225 A (MONSON JAMES A) 11 May 1999 (1999-05-11) * claims 1,6-8,13,14,27,28,31-33; examples *	1-10	A61K7/32 A61K7/16 A61K7/15 A61K7/11 A61K7/06 A61K7/00
X	WO 97 20626 A (MONSON JAMES A) 12 June 1997 (1997-06-12) * page 11, line 12 - line 16; claims 11,13-16; examples *	1,2,4-10	
X	US 5 879 669 A (SCHMENGER JUERGEN ET AL) 9 March 1999 (1999-03-09) * claims 1,5,7; examples 3,4 *	1,2,4,7-10	
X	US 3 541 581 A (MONSON JAMES A) 17 November 1970 (1970-11-17) * column 13, line 69 - line 71; claims 1,4,9,16,17; examples *	1,2,4,6,7,9,10	
X	US 4 753 747 A (CLARK KENNETH F ET AL) 28 June 1988 (1988-06-28) * column 6, line 19 - line 28 * * column 14, line 16 - line 19; claims 14,19; example 9 *	1,2,4,5,9,10	TECHNICAL FIELDS SEARCHED (Int.Cl.7) A61K
X	EP 0 919 219 A (WELLA AG) 2 June 1999 (1999-06-02) * examples 6,13,14 *	1,4,6,7,9,10	
X	DE 43 15 405 A (WELLA AG) 10 November 1994 (1994-11-10) * examples 3,4 *	1,2,4,7	
A	WO 99 38490 A (PROCTER & GAMBLE) 5 August 1999 (1999-08-05) * page 11, paragraph E * * page 12, line 29 - page 13, line 5; claims 1,2; examples *  -/--	1-10	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 16 May 2000	Examiner Minas, S
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	EP 0 468 555 A (GIULIANI SPA) 29 January 1992 (1992-01-29) * examples 1,5 *	1-10	
A	US 5 679 324 A (LISBOA LOUIS SERGIO ET AL) 21 October 1997 (1997-10-21) * column 5, line 6-3; claims *	1-10	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>16 May 2000</b>	Examiner <b>Minas, S</b>
CATEGORY OF CITED DOCUMENTS			
<div><div>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</div><div>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... &amp; : member of the same patent family, corresponding document</div></div>			

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EPO FORM 1503 03.82 (P04C01)

# ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 00 20 0043

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on the European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

16-05-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5902225 A	11-05-1999	AU 3896395 A AU 5590296 A WO 9611162 A	02-05-1996 10-10-1996 18-04-1996
WO 9720626 A	12-06-1997	AU 4685696 A EP 0876204 A	27-06-1997 11-11-1998
US 5879669 A	09-03-1999	NONE	
US 3541581 A	17-11-1970	GB 1279145 A NL 6912564 A	28-06-1972 22-02-1971
US 4753747 A	28-06-1988	BE 1002225 A BR 8801271 A DE 3809947 A ES 2009247 A FR 2615186 A GB 2204875 A, B IT 1219889 B MX 167441 B PH 25245 A PT 86979 A, B ZA 8801884 A	23-10-1990 29-11-1988 24-11-1988 16-09-1989 18-11-1988 23-11-1988 24-05-1990 23-03-1993 27-03-1991 31-05-1989 29-11-1989
EP 0919219 A	02-06-1999	DE 19753108 A JP 11217318 A	05-08-1999 10-08-1999
DE 4315405 A	10-11-1994	BR 9405353 A DE 59406123 D WO 9426235 A EP 0648105 A ES 2070106 T JP 7509004 T	31-08-1999 09-07-1998 24-11-1994 19-04-1995 01-06-1995 05-10-1995
WO 9938490 A	05-08-1999	NONE	
EP 0468555 A	29-01-1992	IT 1243379 B AT 146674 T CA 2044676 A DE 69123795 D DE 69123795 T DK 468555 T ES 2097787 T GR 3022790 T JP 4234315 A US 5449520 A	10-06-1994 15-01-1997 28-01-1992 06-02-1997 10-07-1997 09-06-1997 16-04-1997 30-06-1997 24-08-1992 12-09-1995

EPO FORM P0469

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

EP 00 20 0043

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

**16-05-2000**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5679324      A	21-10-1997	NONE	

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NL00/00599

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*)

**Description, pages:**

1-21 as originally filed

**Claims, No.:**

1-17 as received on 15/10/2001 with letter of 15/10/2001

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☒ the claims, Nos.: 18
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NL00/00599

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Yes:	Claims
	No:	Claims 1-17
Inventive step (IS)	Yes:	Claims
	No:	Claims 1-17
Industrial applicability (IA)	Yes:	Claims 1-17
	No:	Claims

### 2. Citations and explanations see separate sheet

## VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
see separate sheet

REPLACED BY  
ART 34 AMDT

## Claims

1.           Cosmetics composition comprising a thickener, a propellant, a surfactant and water, wherein the composition is contained in a container under a pressure of no more than 3 bar.
2.           Composition according to claim 1, wherein the pressure is no more  
5   than 2 bar.
3.           Composition according to claim 1 or 2, wherein the container is a plastic container.
4.           Composition according to any of the claims 1-3, wherein said composition comprises at least two surfactants and a hydrophobic compound  
10   having a HLB-value of less than 10 wherein said composition further has a viscosity according to Brookfield (23°C, Spindle TE, 5 RPM) of in the range of 5,000 to 50,000 mPas.
5.           Composition according to any of the preceding claims, wherein the propellant is a hydrocarbon having from 4 to 7 carbon atoms.
- 15   6.           Composition according to claim 5, wherein the propellant is isopentane.
7.           Composition according to any of the preceding claims, comprising from 0.01 to 30 wt.% of thickener, from 1 to 15 wt.% of propellant, from 0.5 to 50 wt.% of surfactant and the balance being water and other customary body  
20   care ingredients.
8.           Composition according to any of the preceding claims, wherein the thickener is chosen from the group of gums, poly(meth)acrylates, polymers based upon aerosil-types, polysaccharides, high molecular polyethyleneglycolmono- and diesters of fatty acids, polyacrylamides,  
25   polyvinylalcohols, polyvinylpyrrolidons, esters of fatty acids with polyols, fatty alcoholethoxylates, alkyloligoglucosides and sugar-esters.
9.           Composition according to claim 8, wherein the thickener is chosen from xanthan gom, guar-guar, agar-agar alginates, tyloses, carboxymethylcellulose, hydroxyethylcellulose.
- 30   10.          Composition according to any of the preceding claims further comprising one or more ingredients chosen from the group of pH regulating agents, oil bodies, emulsifying agents, preservatives, perfumes, moisturizing agents, UV-filters, emollients, superfatting agents, brighteners, strength



improving agents, silicon agents, fats, waxes, lecithins, phospholipids, stabilizing agents, anti-bacterial agents and other bioactive agents, odor-absorbing agents, antiperspirants, antidandruff agents, film-forming agents, swelling agents, antioxidants, insect-repellents, hydrotropes, tanning agents, tyrosin inhibitors, solubilizers and colorants.

11. Composition according to any of the preceding claims, wherein said composition comprises a fatty alcohol preferably of the formula  $R_1OH$ ,  $R_1$  being a aliphatic hydrocarbon group containing 6 to 22 carbon atoms and 0,1,2, or 3 double bonds.

12. Composition according to any of the preceding claims, wherein said composition comprises a fatty alcoholalkoxylate preferably of the formula  $R_2O(AlkO)_mH$ ,  $R_2$  being an aliphatic hydrocarbon group containing 6 to 22 carbon atoms,  $m$  being an integer from 1 to 30 and  $AlkO$  being an alkyleneoxide.

13. Composition according to any of the preceding claims, wherein said composition comprises a fatty alcoholalkoxylate of the formula  $R_2O(AlkO)_mH$ ,  $R_2$  being an aliphatic hydrocarbon group containing 8 to 22 carbon atoms,  $m$  being an integer from 5 to 20 and  $AlkO$  being chosen from ethyleneoxide and propylene oxide.

14. Composition according to any of the claim 4 to 13, wherein the viscosity according to Brookfield (23°C, Spindle TE, 5 RPM) of said composition is in the range of 10,000 to 50,000, preferably in the range of 20,000 to 30,000 mPas.

15. Composition according to any of the preceding claims wherein said composition is a gel.

16. Composition according to any of the preceding claims wherein said composition comprises:

- a) 0.01 to 30 % w/w of a thickener,
- b) 0.1 to 20 % w/w of a hydrophobic compound having an HLB value of less than 10,
- c) 0.5 to 40 % anionic surfactants,
- d) 0.25 to 5 % amphoteric surfactants, and/or
- e) 0.5 to 40 % nonionic surfactants,

and is further characterized by the composition having a viscosity of 5,000 to 50,000 mPas and the weight ratio of components c:d or c:e being in the range of 2:1 to 8:1.

- 5 17. Container comprising a cosmetics composition according to any of the preceding claims.

18. Use of a composition according to any of the claims claim 1-16 as a sun cream or lotion, body milk, shampoo, bathing or shower gel, ointment, deodorant, hair care product or moisturizing cream.

# PATENT COOPERATION TREATY

# PCT

REC'D 19 DEC 2001

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P51808PC00		FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/NL00/00599	International filing date (day/month/year) 29/08/2000	Priority date (day/month/year) 30/08/1999	
International Patent Classification (IPC) or national classification and IPC A61K7/32			
Applicant SARA LEE/DE N.V.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 29/03/2001	Date of completion of this report 17.12.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Pregetter, M  Telephone No. +49 89 2399 8719



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NL00/00599

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):  
**Description, pages:**

1-21 as originally filed

### Claims, No.:

1-17 as received on 15/10/2001 with letter of 15/10/2001

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☒ the claims, Nos.: 18
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NL00/00599

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Yes:	Claims	
	No:	Claims	1-17
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-17
Industrial applicability (IA)	Yes:	Claims	1-17
	No:	Claims	

### 2. Citations and explanations see separate sheet

## VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
see separate sheet

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/NL00/00599

**R Item V**

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

D1: US-A-5 902 225 (MONSON JAMES A) 11 May 1999 (1999-05-11)  
D2: WO 97 20626 A (MONSON JAMES A) 12 June 1997 (1997-06-12)  
D4: US-A-3 541 581 (MONSON JAMES A) 17 November 1970 (1970-11-17)  
D5: US-A-4 753 747 (CLARK KENNETH F ET AL) 28 June 1988 (1988-06-28)  
D9: WO 99 38490 A (PROCTER & GAMBLE) 5 August 1999 (1999-08-05)

2.1. The subject-matter of present claim 1 is not new according to Article 33(2) PCT.  
For the interpretation of present claim 1 see item VIII 1.

Document D1 discloses a low-pressure foaming composition to be dispensed from a suitable container at pressures between 10 and 60 psig (0.7-4.1 bar). The composition comprises surfactants, water, propellant and an agent to heighten the viscosity (thickener) (claim 1). The container can consist of plastic (claim 7). The propellant can be a hydrocarbon, e.g. isopentane (claim 8). The pressure in the container preferably is below 35 psig (2.4 bar) (claim 6).

Example 1 of D1 describes a composition comprising 1.5% thickener (carbopol), 30% of surfactants (Plantaren PS300, Ammonium Lauryl Sulfate and Decyl Polyglucose), water and 10% of a mixture of isobutane and isopentane as propellant. This composition has a viscosity of 8000 mPas and is in a container under the pressure of 2.7 bar.

D2 discloses the same as D1.

D4 discloses a cleansing or cosmetic composition in the form of a gel comprising water, soap (surfactant), and a propellant (claim 1), the gelling aid (thickener) being selected from the group consisting of cellulose, sucrose and glucose (claim 8) under a pressure of 6-14 psig (0.4-0.9 bar). The examples disclose mixtures comprising palmitic acid, stearic acid and cetyl alcohol or Brij-52 in combination with Klucel, carbopol, water and a butane/pentane mixture as propellant (table I). The use of isopentane is suggested in col.11, l.50-58.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/NL00/00599

Documents D5 and D9 are also relevant for the assessment of novelty, but will not be discussed in detail. The following passages are relevant:

D5: claims 1, 14 and 19; col.6, l.19-28, example 9, especially col.14, l.12-19.

D9: p.11, section E; examples; claims 1 and 2.

2.2. With regard to dependent claims 2-14 it is noted that a positive opinion can only be given, if dependent claims refer to independent claims that meet the requirements of the PCT.

3. The same argumentation as given above also applies to claims 15, 16 and 17.

**Re Item VIII**

Certain observations on the international application

1. Present claim 1 defines a cosmetic composition comprising several substances. The term "comprise" has to be construed as meaning "include". It does not exclude the presence of further compounds (other propellants, ...).
2. The term "aerosil" employed in claim 8 and appearing to be a registered trade mark has no precise meaning as it is not internationally accepted as a standard descriptive term, thereby rendering the definition of the subject-matter of this claim unclear (Article 6 PCT).

Int. pat. appln. no. PCT/NL 00/00599  
Our letter of October 15 2001

### Amended Claims

1.           Cosmetics composition comprising a thickener, isopentane as propellant, a surfactant and water, wherein the composition is contained in a container under a pressure of at least 0.1 bar in excess of atmospheric pressure and below 3 bar.
- 5   2.           Composition according to claim 1, wherein the pressure is no more than 2 bar.
3.           Composition according to claim 1 or 2, wherein the container is a plastic container.
4.           Composition according to any of the claims 1-3, wherein said  
10 composition comprises at least two surfactants and a hydrophobic compound having a HLB-value of less than 10 wherein said composition further has a viscosity according to Brookfield (23°C, Spindle TE, 5 RPM) of in the range of 5,000 to 50,000 mPas.
5.           Composition according to any of the preceding claims, comprising  
15 from 0.01 to 30 wt.% of thickener, from 1 to 15 wt.% of propellant, from 0.5 to 50 wt.% of surfactant and the balance being water and other customary body care ingredients.
6.           Composition according to any of the preceding claims, wherein the thickener is chosen from the group of gums, poly(meth)acrylates, polymers  
20 based upon aerosil-types, polysaccharides, high molecular polyethyleneglycolmono- and diesters of fatty acids, polyacrylamides, polyvinylalcohols, polyvinylpyrrolidons, esters of fatty acids with polyols, fatty alcoholethoxylates, alkyloligoglucosides and sugar-esters.
7.           Composition according to claim 6, wherein the thickener is chosen  
25 from xanthan gom, guar-guar, agar-agar alginates, tyloses, carboxymethylcellulose, hydroxyethylcellulose.



8. Composition according to any of the preceding claims further comprising one or more ingredients chosen from the group of pH regulating agents, oil bodies, emulsifying agents, preservatives, perfumes, moisturizing agents, UV-filters, emollients, superfatting agents, brighteners, strength  
5 improving agents, silicon agents, fats, waxes, lecithins, phospholipids, stabilizing agents, anti-bacterial agents and other bioactive agents, odor-absorbing agents, antiperspirants, antidandruff agents, film-forming agents, swelling agents, antioxidants, insect-repellents, hydrotropes, tanning agents, tyrosin inhibitors, solubilizers and colorants.
- 10 9. Composition according to any of the preceding claims, wherein said composition comprises a fatty alcohol preferably of the formula  $R_1OH$ ,  $R_1$  being a aliphatic hydrocarbon group containing 6 to 22 carbon atoms and 0,1,2, or 3 double bonds.
- 15 10. Composition according to any of the preceding claims, wherein said composition comprises a fatty alcoholalkoxylate preferably of the formula  $R_2O(AlkO)_mH$ ,  $R_2$  being an aliphatic hydrocarbon group containing 6 to 22 carbon atoms,  $m$  being an integer from 1 to 30 and  $AlkO$  being an alkyleneoxide.
- 20 11. Composition according to any of the preceding claims, wherein said composition comprises a fatty alcoholalkoxylate of the formula  $R_2O(AlkO)_mH$ ,  $R_2$  being an aliphatic hydrocarbon group containing 8 to 22 carbon atoms,  $m$  being an integer from 5 to 20 and  $AlkO$  being chosen from ethyleneoxide and propylene oxide.
- 25 12. Composition according to any of the claim 4 to 11, wherein the viscosity according to Brookfield (23°C, Spindle TE, 5 RPM) of said composition is in the range of 10,000 to 50,000, preferably in the range of 20,000 to 30,000 mPas.
13. Composition according to any of the preceding claims wherein said composition is a gel.

14. Composition according to any of the preceding claims wherein said composition comprises:

- a) 0.01 to 30 % w/w of a thickener,
- b) 0.1 to 20 % w/w of a hydrophobic compound having an HLB value of less than 10,
- c) 0.5 to 40 % anionic surfactants,
- d) 0.25 to 5 % amphoteric surfactants, and/or
- e) 0.5 to 40 % nonionic surfactants,

10 and is further characterized by the composition having a viscosity of 5,000 to 50,000 mPas and the weight ratio of components c:d or c:e being in the range of 2:1 to 8:1.

15. Container comprising a cosmetics composition according to any of the preceding claims.

15 16. Use of a composition according to any of the claims claim 1-14 as a sun cream or lotion, body milk, shampoo, bathing or shower gel, ointment, deodorant, hair care product or moisturizing cream.

17. Use of isopentane as a propellant incorporated into a cosmetics composition.

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>P51808PC00</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/NL 00/ 00599</b>	International filing date (day/month/year) <b>29/08/2000</b>	(Earliest) Priority Date (day/month/year) <b>30/08/1999</b>
Applicant  <b>SARA LEE/DE N.V.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

**AQUEOUS LOW PRESSURE COSMETIC COMPOSITION COMPRISING A PROPELLANT, A THICKENER AND A SURFACTANT**

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures.

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(54) Title: COSMETICS COMPOSITION

(57) Abstract: The invention relates to a cosmetics composition comprising a thickener, a propellant, a surfactant and water, wherein the composition is contained in a container under a pressure of no more than 3 bar.

WO 01/15659 A2

Title:       Cosmetics composition

The invention relates to a cosmetics composition and to its use.

Cosmetics compositions are nowadays available in many different forms. One product having a very distinct appearance from another product may nevertheless serve the same purpose as said other product. Examples of  
5 the wide variety that cosmetics may have include lotions, gels, creams, ointments, milks, aerosols, pastes and so forth.

The present invention seeks to provide a new form for a cosmetics composition. The objective form is a viscous composition, preferably a gel, which, after application to the skin, creates a post-application foaming effect.  
10 When the gel is contacted with the skin, it is desired that a noticeable transition takes place from a gel to a dense creamy foam. To achieve this goal, the invention provides a cosmetics composition comprising a thickener, a propellant, a surfactant and water, wherein the composition is contained in a container under a pressure of no more than 3 bar.

15 Surprisingly, it has been found that a propellant can be incorporated into a cosmetics composition wherein the resultant pressure is less than that of the propellant on its own. Additionally, the propellant is incorporated into the cosmetics composition substantially without affecting the stability of the composition, even if the composition has the form of a gel. When the  
20 composition is applied to the skin, the propellant is released from the gel and the user experiences a foam which is very rich, creamy and long-lasting. It has further been found that the composition is non-flammable and as such is associated with a reduced risk for consumers with respect to fire and explosion hazards.

25 It is to be noted that cosmetics compositions in the form of a gel and comprising a propellant are known per se. In the field of shaving creams, gels are marketed which, due to the presence of a propellant, convert into a foaming layer or lather when brought into contact with the skin. More recently, this technology has been modified to allow shower foam products to  
30 be marketed. These compositions are generally packaged in containers having two compartments, e.g. a bag made of a laminated material suspended inside an aerosol can. Moreover, the amount of propellant needed in these compositions is relatively high. Hence, shaving gels are packed into pressurized containers wherein the pressure usually is as high as 8 bar or

more. Consequently, the container needs to be particularly strong and is therefore made of metal.

A composition according to the invention does not require such high amounts of propellant. As has been mentioned, the pressure in a container in which the composition is contained may be as low as 3 bar or less. Preferably, said pressure is lower than 2 bar. Due to this low pressure, the present composition may advantageously be packed in a plastic container, e.g. a polyethylene or polypropylene container, which is economically much more attractive than package in a metal container. Furthermore, a composition according to the invention has been found to have a lower pressure at elevated temperatures than expected. This feature is advantageous in that it can often not be avoided that the product needs to be stored at elevated temperatures for a certain period of time. It is to be noted that the pressure refers to an absolute pressure. Furthermore, the pressure will be in excess of atmospheric pressure, i.e. an overpressure of at least 0.1 bar.

It is preferred that the present composition has the form of a gel. Accordingly, the composition comprises a thickener, which is preferably present in an amount of from 0.01 to 30 wt.%, more preferably from 0.5 to 10 wt.%, even more preferably from 1 to 3 wt.%, based on the weight of the composition. Suitable thickeners are chosen for the compatibility with the propellant and for their capability to provide a stable viscous product, more in particular a stable gel. For many applications a suitable viscosity is a viscosity of 5,000 to 50,000, preferably 10,000 to 50,000, and more preferably 20,000 to 30,000 mPas, measured as Brookfield viscosity (23°C, spindle TE, 5 Rpm), e.g. to employ in cleansing gels, face cleansing gels, face care gels, gels for masks, and similar compositions which are commonly used in body care.

Examples of thickeners to be used in compositions according to the present invention include side chain modified polymers based on aerosil-types (hydrophilic silicic acids), polysaccharides such as xanthan gum, guar-guar, agar-agar, alginates and tyloses, carboxymethylcellulose, hydroxyethylcellulose, high molecular polyethylene glycol mono- and diesters of fatty acids, polyacrylates (e.g. Carbopole® of Goodrich or Synthalene® of Sigma), polyacrylamide, polyvinyl alcohols and polyvinylpyrrolidon. Particularly, thickeners with associate action, such as fatty acid glycerides, esters of fatty acids with polyols such as pentaerythrit or trimethylolpropane,

fatty alcohol ethoxylates, optionally with EO-homologue distribution, alkyloligoglucosides and sugar esters may be used.

In accordance with the invention, highly preferred thickeners are gums and poly(meth)acrylates, such as polyacrylic acid. Particularly stable  
5 gels have been obtained using xanthan gum as the thickener. The presence of a molecular network is highly beneficial to the stability of the gel and can be demonstrated in rheological measurements.

A further important component of the present composition is a propellant. Advantageously, the propellant is chosen for its physico-chemical  
10 properties and the character of the foam texture produced on application to skin. A further consideration on which the choice for a suitable propellant may be based is its environmentally friendly character. Possible propellants are hydrocarbons, such as alkanes having from 1 to 12 carbon atoms. Preferred  
propellants are hydrocarbons with 4 to 7 carbon atoms, such as linear or  
15 branched alkanes, including cyclic ones. Particularly good results have been obtained using isopentane as a propellant. The propellant is preferably present in an amount suitable to achieve the desired pressure of the composition in a container in which it is packed. Suitable amounts range from 0.1 to 20 wt.%, preferably from 1 to 15 wt.%, more preferably from 4 to 8 wt.%, based on the  
20 weight of the composition.

Furthermore it has been found unexpectedly that alkanes in combination with thickeners, can yield highly viscous mixtures, of a gel-like nature. In cosmetic or pharmaceutical applications, these gel-like mixtures demonstrate a high stability, also when the temperature is decreased. Another  
25 advantage of compositions according to the invention may be, the pleasant sensation to the skin, compositions according to the invention may give rise to.

The composition further comprises one or more surfactants. Preferably, the surfactant or surfactants are foaming and skin friendly. Possible surfactants include anionic, nonionic and/or amphoteric surfactants.  
30 Typical examples of anionic surfactants include soaps, alkylbenzol sulfonates, alkane sulfonates, olefin sulfonates, alkyl ether sulfonates, glycerine ether sulfonates,  $\alpha$ -methylester sulfonates, sulfofatty acids, alkyl sulfates, fatty alcohol ether sulfates, glycerine ether sulfates, fatty acid ether sulfates, hydroxy mixed ether sulfates, monoglyceride (ether) sulfates, fatty acid  
35 amide(ether) sulfates, mono- and dialkylsulfosuccinates, mono- and dialkyl sulfosuccinamates, sulfotriglycerides, amide soaps, ether carboxylic acids and

salts thereof, fatty acid isothionates, fatty acid sarcosinates, fatty acid taurides, N-acylamino acids such as acylactylate, acyltartrate, acylglutamate and acylaspartate, alkyloligoglucoside sulfates, protein fatty acid condensates and alkyl (ether) phosphates. Typical examples of nonionic surfactants include fatty alcoholpolyglycol ethers, alkylphenolpolyglycol ethers, fatty acid polyglycol esters, fatty acid amidpolyglycol ethers, fatty aminopolyglycol ethers, alkoxyolated triglycerides, mixed ethers, optionally partially oxidized alk(en)yloligoglycosides or glucuronic acid derivatives, fatty acid-N-alkylcycamides, proteinhydrolysates, polyol fatty acid esters, sugar esters, sorbitan esters, polysorbates and amino-oxides. Typical examples of amphoteric or zwitterionic surfactants include alkyl betains, alkylamido betains, aminopropionates, aminoglycinates, imidazolinium betains and sulfo betains. Further reference, e.g. concerning the preparation of these compounds, may be made to J. Falbe (ed.), "Surfactants in Consumer Products", Springer Verlag. Berlin. 1987, p. 54-124 or J. Falbe (ed.), "Katalysatoren, Tenside und Mineralöladditive", Thieme Verlag, Stuttgart, 1978, p. 123-217. Examples of preferred surfactants include polysorbate 20 or 40, coco glucoside, lauryl glucoside, decyl glucoside, lauryl sulfates such as ammonium, sodium, magnesium, MEA, TEA, or Mipa lauryl sulfate, cocamidopropyl betain, and sodium alkyl sulfosuccinates. The surfactant is preferably present in an amount of from 0.5 to 50 wt.%, more preferably from 2 to 20 wt.% and most preferably from 8 to 13 wt.%, based on the weight of the composition.

It is possible to use a combination of ionic surfactants and amphoteric or non-ionic surfactants. Preferably the ionic surfactant is an anionic surfactant in such combinations. Typically the concentration ranges of such a composition comprising ionic surfactants and amphoteric or non-ionic surfactants are: 0.01 to 30 wt.% of a thickener, 0.1 to 20 wt.% of a hydrophobic compound having an HLB (hydrophilic/lipophilic balance) value of less than 10, 0.5 to 40 wt.% anionic surfactants, 0.25 to 5 wt.% amphoteric surfactants and/or 0.5 to 40 wt.% nonionic surfactants. Furthermore such combinations are preferably used in a ionic surfactant to amphoteric/non-ionic surfactant of in the range of 2:1 to 8:1 wt. to wt., more preferably in the range of 4:1 to 6:1 wt. to wt..

The present compositions may further comprise fatty alcohols, by which primary aliphatic alcohols of the formula  $R_1OH$  are meant, in which  $R_1$



is an aliphatic hydrocarbon group containing 6 to 22, preferably 10 to 18 carbon atoms and 0, 1, 2 or 3 double bonds. Typical examples are capron alcohol, capryl alcohol, 2-ethylhexyl alcohol, caprin alcohol, lauryl alcohol, isotridecyl alcohol, myristyl alcohol, cetyl alcohol, palmoleyl alcohol, stearyl alcohol, isostearyl alcohol, oleyl alcohol, elaidyl alcohol, petroselinyl alcohol, linolyl alcohol, linolenyl alcohol, elaeostearyl alcohol, arachyl alcohol, gadoleyl alcohol, behenyl alcohol, erucyl alcohol, and brassidyl alcohol and mixtures thereof. These compounds may be present in amounts of 0.1 to 20, preferably 0.5 to 10 wt.% based on the weight of the composition.

The present compositions may further comprise fatty alcohol ethoxylates, which may have the formula  $R_2O(AlkO)_mH$ , in which  $R_2$  is an aliphatic hydrocarbon group containing 6 to 22, preferably 10 to 18 carbon atoms and 0, 1, 2 or 3 double bonds,  $m$  is an integer from 1 to 30, preferably 5 to 20, more preferably 10 to 15, and  $AlkO$  is an alkylene oxide.  $AlkO$  may be chosen from ethylene oxide, propylene oxide and/or butylene oxide. These compounds may be present in amounts of 0.1 to 20, preferably 0.5 to 10 wt.% based on the weight of the composition.

Depending on the envisaged purpose of the composition, one or more other ingredients may be present. Examples of such ingredients include pH regulating agents, oil bodies, emulsifying agents, preservatives, perfumes, moisturizing agents, UV-filters, emollients, superfatting agents, brighteners, strength improving agents, silicon agents, fats, waxes, lecithins, phospholipids, stabilizing agents, anti-bacterial agents and other bioactive agents, odor-absorbing agents, antiperspirants, antidandruff agents, film-forming agents, swelling agents, antioxidants, insect-repellents, hydrotropes, tanning agents, tyrosin inhibitors, solubilizers and colorants. The composition may further comprise a conventional cosmetics base, such as water, oil, ointment etc..

The composition is preferably formulated to be a gel. In a preferred embodiment the gel transforms upon dispensing from a container into a soft and foamy mousse which cleans in a soft and silky manner.

The pH of the composition is preferably regulated to be close to the pH of the skin itself. Accordingly, the pH of the composition is preferably slightly acidic to slightly alkaline, e.g. in the range of 5 to 8. An example of a suitable pH regulating agent is citric acid. The skilled person will be aware of numerous suitable pH regulating agents that may be employed in the present

type of compositions. The amount of the pH regulating agent present is of course adjusted so that the desired pH is achieved.

Examples of suitable oil bodies are guarbeta-alcohols based upon fatty alcohols containing 6 to 18 or preferably 8 to 10 carbon atoms, esters of linear C<sub>6</sub>-C<sub>22</sub> fatty acids with linear C<sub>6</sub>-C<sub>22</sub> fatty alcohols, esters of branched C<sub>6</sub>-C<sub>13</sub> Carboxylic acids with linear C<sub>6</sub>-C<sub>22</sub> fatty alcohols, such as myristyl-myristate, myristyl-palmitate, myristyl-stearate, myristyl-isostearate, myristyl-oleate, myristyl-behenate, myristyl-erucate, cetyl-myristate, cetyl-palmitate, cetyl-stearate, cetyl-isostearate, cetyl-oleate, cetyl-behenate, cetyl-erucate, stearyl-myristate, stearyl-palmitate, stearyl-stearate, stearyl-isostearate, stearyl-oleate, stearyl-behenate, stearyl-erucate, isostearyl-myristate, isostearyl-palmitate, isostearyl-stearate, isostearyl-isostearate, isostearyl-oleate, isostearyl-behenate, isostearyl-oleate, oleyl-myristate, oleyl-palmitate, oleyl-stearate, oleyl-isostearate, oleyl-oleate, oleyl-behenate, oleyl-erucate, behenyl-myristate, behenyl-palmitate, behenyl-stearate, behenyl-isostearate, behenyl-oleate, behenyl-behenate, behenyl-erucate, erucyl-myristate, erucyl-palmitate, erucyl-stearate, erucyl-isostearate, erucyl-oleate, erucyl-behenate and erucyl-erucate. Other examples are esters of linear C<sub>6</sub>-C<sub>22</sub> fatty acids with branched alcohols, in particular with 2-ethylhexanol, esters of carboxylic acids with linear or branched C<sub>6</sub>-C<sub>22</sub> fatty alcohols, in particular dioctylmalates, esters of linear and/or branched fatty acids with multivalent alcohols, such as propyleneglycol, dimerdiols or trimertriols, and/or guarbeta-alcohols, triglycerides based upon C<sub>6</sub>-C<sub>10</sub> fatty acids, liquid mono-/di-/tri-glyceride mixtures based upon C<sub>6</sub>-C<sub>18</sub> fatty acids, esters of C<sub>6</sub>-C<sub>22</sub> fatty alcohols and/or guarbeta-alcohols with aromatic carboxylic acids, in particular benzoic acid, esters of C<sub>2</sub>-C<sub>12</sub> dicarboxylic acids with linear or branched alcohols having 1 to 22 carbon atoms or polyols with 2 to 10 carbon atoms and 2 to 6 hydroxyl groups, oils of vegetable origin, branched primary alcohols, substituted cyclohexanes, linear and branched C<sub>6</sub>-C<sub>22</sub> fatty alcohol carbonates, guarbeta-carbonates, esters of benzoic acid and linear and/or branched C<sub>6</sub>-C<sub>22</sub> alcohols, such as Finsolv® TN, linear or branched, symmetric or asymmetric dialkylethers having 6 to 22 carbon atoms per alkyl group, ring opening products of epoxy fatty acid esters and polyols, silicon-oils and/or aliphatic respectively naphthalenic hydrocarbons, such as squalane, squalene or dialkylcyclohexanes.

An emollient or moisturizing agent may be present in order to improve the ease of application of the composition and the final skin feel the user experiences. Examples of suitable emollients or moisturizing agents include glycerin, propenylglycol, PEG 7 glyceryl cocoate, PEG 6 caprylic or capric glycerides, glyceryl oleate and lipids in general, such as paraffin oil or polar oils. An emollient or moisturizing agent is preferably present in an amount ranging from 0.5 to 15 wt.%, based on the weight of the composition.

Suitable emulsifying agents are for example non-ionic surfactants such as:

- reaction products of 2 to 30 mole ethylene oxide and/or 0 to 5 mole propylene oxide with linear fatty alcohols having 8 to 22 carbon atoms, with fatty acids having 12 to 22 carbon atoms, with alkylphenols having 8 to 15 carbon atoms in the alkyl group and also with alkylamines having 8 to 22 carbon atoms in the alkyl group;
- alkyl and/or alkenyl-oligoglycosides having 8 to 22 carbon atoms in alk(en)yl group and ethoxylated analogs thereof;
- reaction products of 1 to 15 mole ethylene oxide and castor oil and/or fixated castor oil;
- reaction products of 15 to 60 mole ethylene oxide and castor oil and/or fixated ricinoleic oil;
- partial-esters of glycerin and/or sorbitane with unsaturated, linear or saturated, branched fatty acids having 12 to 22 carbon atoms and/or hydroxycarboxylic acids having 3 to 18 carbon atoms, as well as adducts thereof with 1 to 30 mole ethylene oxide;
- partial-esters of polyglycerin (average self-condensation degree 2 to 8), polyethyleneglycol (molecular weight of 400 to 5000), trimethylolpropane, pentaerythrite, sugar-alcohols, such as sorbitol, alkylglucosides, such as methylglucoside, butylglucoside, laurylglucoside, as well as polyglucosides, such as cellulose, with saturated and/or unsaturated, linear or branched fatty acids having 12 to 22 carbon atoms and/or hydroxycarboxylic acids having 3 to 18 carbon atoms, as well as adducts thereof with 1 to 30 mole ethylene oxide;

- mixed-esters of pentaerythrite, fatty acids, citric acid and fatty alcohols in accordance with DE 1165574 PS and/or mixed-esters of fatty acids having 6 to 22 carbon atoms, methylglucose and polyols, preferably glycerin or polyglycerin;
- mono-, di- and trialkylphosphates, as well as mono-, di- and/or tri-PEG-alkylphosphates and salts thereof;
- wool-wax alcohols;
- polysiloxan-polyalkyl-polyether-copolymers respectively derivatives thereof;
- polyalkelyneglycols;
- glycerincarbonates;

The reaction products of ethylene oxide and/or propylene oxide with fatty alcohols, fatty acids, alkylphenols or ricinolic oils are commercially obtainable products. They are available as homologous mixtures, of which the average alkoxylation degree is in accordance with the mass ratio of ethylene oxide and/or propylene oxide and substrate, with which the reaction takes place. C<sub>12</sub>-C<sub>18</sub> fatty acid mono- and diesters of reaction products of ethylene oxide and glycerin are known in relation to cosmetic compositions from DE-2024051.

Typical examples of suitable partial-glycerides are monoglyceride-hydroxy-stearinate, diglyceridehydroxy-stearinate, monoglyceride-isostearinate, diglyceride-isostearinate, monoglyceride-oleiate, diglyceride-oleiate, monoglyceride-ricinoleate, diglyceride-ricinoleate, monoglyceride-linoleate, diglyceride-linoleate, monoglyceride-linolenate, diglyceride-linolenate monoglyceride-erucate, diglyceride-erucate, monoglyceride-tartrate, diglyceride-tartrate, monoglyceride-citrate, diglyceride-citrate, monoglyceride-malate, diglyceridemalate, as well as technical mixtures thereof, which may still contain small amounts of triglyceride, depending upon the production process. Reaction products of 1 to 30, preferably 5 to 10 mole ethylene oxide with aforementioned partial-glycerides are suitable too.

Examples of suitable sorbitol-esters are sorbitol-monoisostearate, sorbitol-sesquiosostearate, sorbitol-diisostearate, sorbitol-triisostearate, sorbitol-monooleate, sorbitol-sesguioleate, sorbitol-dioleate, sorbitol-trioleate, sorbitol-monoerucate, sorbitol-sesguierucate, sorbitol-dierucate, sorbitol-trierucate, sorbitol-monoricinoleate, sorbitol-sesquiricinoleate, sorbitol-di-

ricinoleate, sorbitol-triricinoleate, sorbitol-monohydroxystearate, sorbitol-sesquihydroxy-stearate, sorbitol-dihydroxystearate, sorbitol-trihydroxy-stearate, sorbitol-monotartrate, sorbitol-sesquitartrate, sorbitol-ditartrate, sorbitol-tritartrate, sorbitol-monocitrate, sorbitol-sesquicitrate, sorbitol-di-citrate, sorbitol-tricitrate, sorbitol-monomaleate, sorbitol-sesquimaleate, sorbitol-dimaleate, sorbitol-trimaleate as well as technical mixtures thereof. Reaction products of 1 to 30, preferably 5 to 10 mole ethylene oxide with said sorbitol esters are suitable too.

Typical examples of suitable polyglycerin esters are polyglyceryl-2 dipolyhydroxy-stearate (Dehymuls® PGPH), polyglycerin-3-diisostearate (Lameform® TGI), polyglyceryl-4 isostearate (Isolan® GI 34), polyglyceryl-3 oleate, diisostearoyl polyglyceryl-3 diisostearate (Isolan® PDI), polyglyceryl-3 methylglucose distearate (Tego Care® 450), polyglyceryl-3 beeswax (Cera Bellina®), polyglyceryl-4 caprate (Polyglycerol Caprate T20 10/90), polyglyceryl-3 cetyl ether (Chimexane® NL), polyglyceryl-3 distearate (Cremophor® GS 32) and polyglyceryl polyricin-oleate (Admul® WOL 1403) polyglyceryl dimerateisostearate, as well as, mixtures thereof.

Further examples of suitable polyol esters are possibly with 1 to 30 mole ethylene oxide derivatized mono-, di- and triesters of trimethylolpropane or pentaerythrite with lauric acid, cocinic acid, palmic acid, talcum-oil acid, palmic acid, stearic acid, oleic acid, behenic acid and the like.

Cationic surfactants may also be suitable emulsifying agents. Preferred cationic surfactant are quaternary esters, in particular quaternary methyl-di-fatty acid- triethanol-amine-ester salts.

Superfating agents may be compounds such as lanolin or lecithin as well as polyethoxylated or acylated lanolin- and lecithin derivatives, polyol fatty acid esters, monoglycerides and fatty acid alkanolamides, wherein fatty acid alkanolamides also tend to stabilizing the foam.

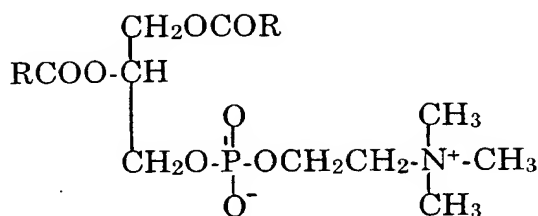
Brighteners may for example be selected from: alkylene glycolesters, in particular ethylene glycoldistearate, fatty acid alkanolamide, in particular cocinic acid diethanolamide; partial-glycerides, especially monoglyceridestearate; esters of multivalent, possibly hydroxyl substituted carboxylic acids with fatty alcohols having 6 to 22 carbon atoms, in particular esters with long chains of tartaric acid; fatty compounds, such as fatty acids, fatty ketones, fatty aldehydes, fatty ethers and fatty carbonates, which have a total of at least 24 carbon atoms, in particular laurin and distearyl ether; fatty

acids such as stearic acids, hydroxystearic acids or behenic acids, ring opening products of olefinepoxides having 12 to 22 carbon atoms with fatty alcohols having 12 to 22 carbon atoms and/or polyols having 2 to 15 carbon atoms and 2 to 10 hydroxyl groups, as well as mixtures thereof.

5 As strength improving agents, particularly suitable groups of compounds are e.g. C<sub>12</sub>-C<sub>22</sub> fatty alcohols or hydroxy- fatty alcohols, preferably having 16 to 18 carbon atoms. Partial-glycerides, fatty acids or hydroxy fatty acids are also examples of suitable strength improving agents. Preferred is a combination of these compounds with alkyloligoglucosides and/or fatty acids-  
10 N-methylglucamides of equal chain length and/or polyglycerinpoly-12-hydroxystearates.

Examples of suitable silicon compounds are dimethylpolysiloxanes, methylphenylpolysiloxanes, cyclic silicones, as well as amino-, fatty acid-,  
15 alcohol-, epoxy-, fluoro-, glycoside-, and/or alkylated silicon compounds, which may either be in a liquid phase or a resin phase, at room temperature. Other examples are dimethicones, in particular mixtures of dimethicones having an average chain length of 200 to 300 dimethylsiloxane moieties and hydrated silicates. A detailed overview of suitable volatile silicones can be found in Todd et al., Cosm. Toil. 91, 27 (1976).

20 Typical examples of fats are tri-glycerides. Suitable waxes are for example natural waxes, such as candililla wax, carnauba wax, Japan wax, esparto grass wax, ceric wax, guaruma wax, rice bran wax, sugar cane wax, orycury wax, montan wax, bees wax, shellac wax, walrat, lanolin (wool wax), tail root fat, ceresin, ozocerite (earth wax), petrolatum, paraffin wax, micro  
25 waxes, chemically modified waxes (hard waxes) such as montan ester waxes, sasol waxes, hydrated jujube waxes, as well as synthetic waxes, such as polyalkylene waxes and polyethyleneglycol waxes. In addition to fats, certain compounds that are similar to fats may be added, such as lecithins and phospholipids. With lecithins, the person skilled in the art means those  
30 glycerophospholipids, which can be formed by esterification of fatty acids, glycerin, phosphoric acids and choline. In the art, lecithins are therefor also often referred to as phosphatidylcholine (PC) and can be characterized by the following general formula:



wherein R typically represents linear aliphatic hydrocarbon moieties having 15 to 17 carbon atoms and up to 4 cis-double bonds. Examples of natural lecithins are compounds from the group of Cephalins, which are also referred to as phosphatide acids, and derivatives of 1,2-diacyl-sn-glycerin-3-phosphoric acids.

Examples of suitable phospholipids are mono-esters and, preferably, di-esters of phosphoric acids and glycerin (i.e. glycerin phosphates), which are generally regarded as fatty substances. Sphingosines or better sphingolipids are other examples of suitable additives.

Metal salts of fatty acids, such as magnesium- aluminum- and/or zinc stearate respectively -ricinoleate can be employed as stabilizing agents.

Suitable biologically active additives include tocopherol, tocopherol acetate, tocopherol palmitate, ascorbic acid, desoxyribonucleinic acid, retinol, bisabolol, allantoin, phytantriol, panthenol, AHA acids, amino acids, ceramides, pseudoceramides, essential oils, plant extracts and vitamin C complexes.

Cosmetic anti bacterial agents are active against the development of body odors. Body odors develop due to the activity of dermal bacteria on apocryne perspiration, during which unpleasantly smelling metabolites are formed.

Suitable anti bacterial agents include germination inhibiting compounds which are in principle active against all gram positive bacteria, such as 4-hydroxybenzoic acid and salts plus esters thereof, N-(4-chlorophenyl)-N'-(3,4 dichlorophenyl)urea, 2,4,4'-trichloro-2'-hydroxy-diphenyl ether (Triclosan), 4-chloro-3,5-dimethylphenol, 2,2'-methylene-bis(6-brom-4-chlorophenol), 3-methyl-4-(1-methylethyl)phenol, 2-benzyl-4-chlorophenol, 3-(4-chlorophenoxy)-1,2-propandiol, 3-iodo-propinylbutyl carbamate chlorohexidin, 3,4,4'-trichloro carbanilide (TTC), antibacterial fragrant compounds, thymol, thymian oil, eugenol, clove oil, menthol, mint oil, fernesol,

phenoxyethanol, glycerin-monolaurate (GML), diglycerin-monocaprate (DMC), salicylic acid-N-alkylamide such as salicylic acid-n-octylamide or salicylic acid-n-decylamide. Furthermore enzyme inhibitors can be used to help to prevent the production of undesired body odors. Esterase inhibitors, for example, are suitable for this purpose in compositions according to the invention. Preferred enzyme inhibiting agents are trialkylcitrate, such as trimethylcitrate, tripropylcitrate, triisopropylcitrate, tributylcitrate and in particular triethylcitrate (Hydragen® Cat, Henkel KGaA, Dusseldorf/FRG). The compounds inhibit the enzyme activity and reduce the formation of odorous compounds. Other suitable esterase inhibiting compounds are for example sterolsulphates or -phosphates, such as lanosterin-, cholesterin-, campesterin-, stigmasterin and sitosterinsulphate respectively -phosphate. Dicarboxylic acids and esters thereof, such as glutaric acids, glutaric acid mono-ethylesters, adipinic acid, adipinic acid monoethylester, adipinic acid diethylester, malonic acids and malonic acid diethyl ester, hydroxycarboxylic acids and esters thereof such as citric acid, malic acid, tartaric acid or tartaric acid diethylester as well as zinc glycinate.

In addition odor-absorbing agents may be used to suppress the formation of a undesired scent. Suitable compounds decrease the partial pressure of the single components and as such decrease the velocity of spreading. It is important that perfume compositions are not absorbed significantly. Odor-absorbing agents are normally not directly active against bacteria. They comprise for example as primary component a complex of a zinc salt of ricinoleic acid or special fragrance-neutral perfume compounds, known to the skilled professional as fixatives. Examples of these fixatives are labdanum extracts respectively Styrax or certain abietic acid derivatives. Furthermore perfume compounds, including fragrant oils, may serve as masking agents and also may give a typical fragrant character to compositions. Examples of fragrant oils are mixtures of natural and synthetic fragrant compounds. Examples of natural fragrant compounds are extract of flowers, stems, leafs, fruits, fruit skin, fruit peel, roots, woods, herbs, grasses, needles and branches, as well as resins and balms. Furthermore materials of animal origin are suitable, such as civet or castoreum. Typical synthetic fragrant compounds are esters, ethers, aldehydes, ketones, alcohols and hydrocarbons. Examples of fragrant esters as benzylacetate, p-tert-butylcyclohexylacetate linalyl acetate, phenylethylacetate, benzylbenzoate,



benzylformiate, allylcyclohexyl-propionate, styrallylpropionate and benzylsalicylate. An example of a suitable ether is benzylethyl ether. Examples of suitable aldehydes are linear alkanals having 8-18 carbon atoms, citral, citronellal, citronellyloxyacetyl aldehyde, cyclamen aldehyde, hydroxycitronellal, lillial and bourgeonal. Examples suitable ketones are 5 jonones and methylcedrylketone. Examples of suitable alcohols are anethol, citronellol, eugenol, isoeugenol, geraniol, linalool, phenylethyl alcohol and terpineol and examples, of the hydrocarbons mainly terpenes and balms. Preferably mixtures of different fragrant compounds, resulting in a pleasant 10 aroma, are employed. Also commonly used aromatic compounds of the group of etheric oils of low volatility, are suitable perfume oils. Examples of these are sage oil, camille oil, clove oil, balm mint oil, mint oil, cinnamon oil, linden-blossom oil, juniper oil, vetiver oil, olibanum oil, galbanum oil, labdanum oil and lavender oil. Preferred are bergamot oil, dihydromyrcenol, lillial, lyral, 15 citronellol, phenylethyl alcohol,  $\alpha$ -hexylcinnamom aldehyde, geraniol, benzylacetone, cyclamen aldehyde, linalool, boisambrene forte, ambroxan, indol, hedione, sandelice, citron-oil, mandarin-oil, orange-oil, allylamylglycolate, cyclovertal, lavender-oil, muscate sage-oil,  $\beta$ -damascone, geranium-oil bourbon, cyclohexylsalicylate, vertofix coeur, iso-E-super, fixolide 20 NP, evemyl, iraldein gamma, phenyl-acetic acid, geranyl acetate, benzyl acetate, rose-oxide, romilate, irotyl and floramate, either employed alone or in a mixture.

Anti-perspirants reduce the formation of perspiration by influencing the activity of exocrine perspiratory glands, and as such help to prevent 25 wetting of arm pits as well as the formation of body odors. Aqueous or non aqueous compositions of Anti-perspirants typically comprise the following ingredients:

- astringent agents;
- oil compounds;
- non ionic emulsifying agents;
- co-emulsifying agents;
- strength improving agents;
- aiding compounds such as thickening agents or complexing 35 agents; and/or

- non-aqueous solvents such as ethanol, propyleneglycol; and/or glycerin.

Examples of astringent agents are in particular all salts of aluminum, zirconium and zinc, such as aluminumchloride, aluminumchlorohydrate, aluminumdichlorohydrate, aluminumsesquichlorohydrate, and complexes thereof, e.g. with propyleneglycol-1,2. Aluminumhydroxyallantoinate, aluninumchloridetartrate, aluminum-zirconium-trichlorohydrate, aluminum-zirconium-tetrachlorohydrate, aluminum-zirconium-pentachlorohydrate and complexes thereof, for example with amino acids such as glycin. In addition anti-perspirants may comprise the usual oil soluble and water soluble aiding agents in lower concentrations. Examples of oil soluble aiding agents are:

- infection inhibiting, skin protecting or fragrant etheric oils;
- synthetic skin protecting agents; and/or
- oil soluble perfume oils.

Suitable antidandruff agents are for example Octopirox® (1-hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)-2-(1H)-pyridon-monoethanolamine salt, Babypival, Pirocton Olamin, Ketoconazol®, (4-acetyl-1-{4-[2-(2,4-dichlorophenyl)r-2-(1H-imidazol-1-ylmethyl)-1,3-dioxylane-c-4-ylmethoxyphenyl]piperazin, selenedisulfide, sulfur colloids, sulfurpolyethyleneglycolsorbitol-monooleate, sulfurricin-polyethoxylate, sulfurtar destillate, salicylic acid (in particular in combination with hexachlorophen), undexylene acid monoethanolamide sulfosuccinate Na-salt, Lamepon® UD (protein-undecylene acid condensate, zincpyrethione, aluminumpyrethione and magnesiumpyrethione/dipyrethione-magnesiumsulfate).

Usual film-forming agents include chitosan, micro crystalline chitosan, quaternary chitosan, polyvinylpyrrolidon, vinylpyrrolidon-vinylacetate-copolymerisate, polymers of acrylic acid, quaternary cellulose derivatives, collagen, hyaluronic acid, respectively salts thereof and similar compounds.

Suitable swelling agents for aqueous phases include montmorillonites, clay mineral compounds, pemules, as well as alkylated carbopoltypes (Goodrich). Furthermore, polymers suitable as swelling agents can be found in the overview by R. Lochhead in cosm. Toil. 108, 95 (1993).

Suitable UV-filters are for example compounds - liquid or crystalline at room temperature - that are capable of absorbing ultraviolet radiation and of releasing the absorbed energy in the form of electromagnetic radiation of a longer wavelength, e.g. in the form of infra red radiation. UVB filters may be oil soluble or water soluble. Examples of oil soluble compounds are:

- 3-benzylidencamphor respectively 3-benzylidennorcamphor and derivatives thereof, such as 3-(4-methylbenzyliden)camphor as further described in EP 0693471;
- 4-aminobenzoic acid derivatives, preferably 4-dimethylamino-benzoic acid-2-ethylhexyl ester, 4-(dimethylamino)benzoic acid-2-octyl ester and 4-dimethylamino)benzoic acid amyl ester;
- esters of cinnamon acid, preferably 4-methoxy-cinnamon-2-ethylhexyl ester, 4-methoxy-cinnamon acid propyl ester, 4-methoxy-cinnamon acid isoamyl ester 2-cyano-3,3-phenyl cinnamon acid-2-ethylhexyl ester (octocrylene);
- esters of salicylic acid, preferably salicylic acid-2-ethylhexyl ester, salicylic-4-isopropylbenzyl ester, salicylic acid homomenthyl ester;
- derivatives of benzophenones, preferably 2-hydroxy-4-methoxybenzophenone, 2-hydroxy-4-methoxy-4'-methylbenzophenone, 2,2'-di-hydroxy-4-methoxybenzophenone;
- esters of benzalmalon acid, preferably 4-methoxybenzamalon acid di-2-ethylhexyl ester;
- triazin derivatives, e.g. 2,4,6-trianilino-(p-carbo-2'-ethyl-1'-hexyloxy)-1,3,5-triazin and octyl triazon, as described in EP 0 818 450 A1 or dioctyl butamido triazone (Uvasorb® HEB);
- propane-1,3-dione, e.g. 1-(4-tert butylphenyl)-3-(4'-methoxyphenyl)propane-1,3-dione;
- ketotricyclo(5.2.1.0)decane-derivatives as described in EP 0 694 521 B1.

Examples of water soluble UV-filters are:

- 2-phenylbenzimidazol-5-sulfonic acid and alkali-, earth alkali-, ammonium-, alkylammonium-, alkanolammonium- and glucammonium salts thereof;

- sulfonic acid derivatives of benzophenon, preferably 2-hydroxy-4-methoxybenzophenone-5-sulfonic acid and salts thereof;
- sulfonic acid derivatives of 3-benzylidencamphors, e.g. 4-(2-oxo-3-bornylidenemethyl)benzol-sulfonic acid and 2-methyl-5-(2 oxo-3-bornylidene)sulfonic acid and salts thereof.

Typical examples of UV-A filters are derivatives of benzoylmethane, such as 1-(4'-tert.butylphenyl)-3-(4'-methoxyphenyl)-propane-1,3-dione as well as enamine compounds as described in DE 19712033 A1 (BASF). Naturally it is possible to employ mixtures of UV-A and UV-B filters. In addition to the already mentioned soluble compounds, non-soluble sun-screen pigments may also be employed. In particular small dispersed metal oxide particles and metal salts, such as zinc oxide, titanium dioxide, oxides of respectively iron, zirconium, silicium, manganese, aluminum and cerium, as well as mixtures thereof, the salts of silicates (talcum), barium sulfate and zinc stearate. The oxides and salts are employed in compositions for skin care or skin protective emulsions and in decorative cosmetics. The particles should have an average diameter of less than 100 nm, preferably between 5 and 50 nm, more preferably between 15 and 30 nm. The particles may have a spherical, ellipsoidal or other shape. Optionally the surfaces of pigments may have been treated, i.e. by hydrophilization or hydrophobization. Typical examples are coated titanium dioxide, such as titanium dioxide T 805 (Degussa) or Eusolex® T2000 (Merck). Typical examples of hydrophobic coating agents are silicones and particularly trialkoxyoctylsilanes or Simethicones. So called micro- or nanopigments are preferably employed in sun screen compositions. Preferably micronized zinc oxide is used. Further examples of suitable UV-filters can be found in the overview of P. Finkel in SÖFW-Journal 122, 543 (1996).

In addition to the groups of primary light protective agents, as mentioned above, it is also possible to use secondary light protective agents of the group of antioxidants which can stop photochemical reaction chains. These photochemical reactions are induced by UV-radiation as it enters the skin. Typical examples of suitable antioxidants are amino acids such as glycine, histidin, tyrosine, tryptophane, and derivatives thereof, imidazols such as urocaninic acid, and derivatives thereof, peptides, e.g. D,L-carnosin, D-carnosin, L-carnosin and their derivatives (e.g. anserin), carotinoids, carotins, (e.g.  $\alpha$ -carotin,  $\beta$ -carotin, lycopin) and derivatives thereof, chlorogenic acid and

their derivatives, liponic acids and their derivatives (e.g. dihydroliponic acid), aurothioglucose, propylthiouracil, and other thiols (e.g. thioredoxin, glutathion, cystein, cystin, cystamin, and glycosyl-, N-acetyl-, methyl-, ethyl-, propyl-, amyl-, butyl- and lauryl-, palmitoyl-, oleyl-,  $\gamma$ -linoleyl-, cholesteryl- and glyceryl-ester), as well as, salts thereof, dilaurylthiodipropionate distearylthiodipropionate thiodipropionic acid and derivatives thereof (esters, ether, peptide, lipide, nucleotide, nucleoside and salts), as well as, sulfoximins (e.g. buthioninisulfoximine, homocysteinsulfoximine, butioninsulfone-, penta-, hexa-, heptathioninsulfoximine) in very low tolerable concentrations (e.g. pmol to  $\mu$ mol/kg), further (metal)-chelators (e.g.  $\alpha$ -hydroxy fatty acids, palmitine acids, phytine acids, lactoferrin),  $\alpha$ -hydroxy acids, such as citric acid, lactic acid or malic acid, humic acid, bile acid, bile extracts, bilirubin, biliverdin, EDTA, EGTA and derivatives thereof, unsaturated fatty acids and derivatives thereof, such as  $\gamma$ -linolenic acid, linoleic acid or oleic acid, folic acid and derivatives thereof, ubiquinone, ubiquinol, and derivatives thereof, vitamin C and derivatives, such as ascorbylpalmitate, Mg-ascorbylphosphate or ascorbylacetate, tocopherols and derivatives, such as vitamin-E-acetate, vitamin A and derivatives, such as vitamin-A-palmitate, as well as coniferylbenzoate of benzoin resin, rutinic acid and derivatives thereof,  $\alpha$ -glycosylrutine, ferulic acid, furfurylidenglucitol, carnosin, butylhydroxytoluol, butylhydroxyanisol, nordihydroguaiaretic acid resin, nordihydroguaiaretic acid, trihydroxybutyrophenon, uric acid and derivatives thereof, mannose and derivatives thereof, superoxide dismutase, zinc and derivatives thereof, such as ZnO and ZnSO<sub>4</sub>, selenium and derivatives thereof, such as selenium-methionin, stilbenes and derivatives thereof, such as stilbeneoxide, trans stilbene oxide, and the suitable derivatives (salts, esters, ethers, sugars, nucleotides, nucleosides, peptides, lipids) of the mentioned agents.

In order to improve flowability it is possible to add hydrotropes, such as ethanol, isopropanol, or polyols. Preferred polyols have 2 to 15 carbon atoms and at least 2 hydroxyl groups. The polyols may have additional functional groups, in particular amino groups, respectively they may be modified with nitrogen. Typical examples are:

- glycerin;
- alkylene glycols, such as ethylene glycol, diethylene glycol, propylene glycol, butylene glycol, hexylene glycol as well as

polyethyleneglycols with a average molecular weight of 100 to 1000 Dalton;

- technical oligoglycerin mixtures with a self condensation degree of 1.5 to 10 such as technical diglycerin mixtures with a diglycerin concentration of 40 to 50 % w/w;
- methyol compounds, in particular trimethylolethane, trimethylolpropane, trimethylolbutane, pentaerythrite and dipentaerythrite;
- lower alkylglucosides, in particular those having 1 to 8 carbon atoms in alkyl group, such as methyl- and butylglucoside
- sugar alcohols having 5 tot 12 carbon atoms, such as sorbitol or mannitol;
- sugars having 5 to 12 carbon atoms, such as glucose or saccharose
- amino sugars, such as glucamine;
- dialcoholamines such as diethanolamine or 2-amino-1,3-propanediol.

Examples of suitable preservatives are phenoxyethanol, formaldehyde, parabene, pentadiol or sorbic acid, as well as compounds mentioned in "Anlage 6, Teil A und B der Kosmetikverordnung". Examples of suitable insect-repellents are N,N-diethyl-m-toluamide, 1,2-pentadiol or ethyl butylacetylaminopropionate. Dihydroxy-aceton is a suitable tanning agent. Suitable tyrosine inhibitors - which prevent the formation of melanin and are employed in depigmentation agents - are for example arbutin, koji acid, coumarinic acid and ascorbic acid (vitamin C).

Suitable perfume oils are mixtures of natural and synthetic fragrant compounds. Natural fragrant compounds include extracts of flowers, such as lily, lavender, rose, jasmine, neroli and yiang-jiang, stems and leafs such as geranium, patchouli, petit-grain, fruits such as aniseed, coriander, cumin, juniper, fruit skins or peels, such as those of bergamot, lemons, oranges, roots such as macis, angelica, celery, cardamom, costus, iris, calmus, woods such as pine, sandal, guaja, cedar and rose, herbs and grasses such as, estragon, lemon grass, sage, thyme, needles and branches, grove, spruce, pine, larch, resins and balms, such as galbanum, elimi, benzoe, myrrh, olibanum, opoponax. Furthermore materials of animal origin can be used such as civet and castoreum. Typical synthetic fragrant compounds are esters, ethers,

aldehydes, ketones, alcohols and hydrocarbons. Examples of suitable esters are benzylacetate, phenoxyethylisobutyrate, p-tert.-butylcyclohexylacetate, linalylacetate, dimethylbenzylcarbonylacetate, phenylethylacetate, linalylbenzoate, benzylformiate, ethylmethylphenylglycinate, allylcyclohexylpropionate, styrylpropionate and benzylsalicylate. Examples of suitable ethers are benzylethyl ethers, examples of suitable aldehydes are linear alkanals having 8 to 18 carbon atoms, citral, citronellal, citronellyloxyacetaldehyde, cyclamealdehyde, hydroxycitronellal, linal and bourgeonal, examples of suitable ketones are jojones,  $\alpha$ -isomethylionon and methylcedrylketon, Examples of suitable alcohols are anethol, citronellol, eugenol, iso-eugenol, geraniol, linalool, phenylethylalcohol and terpineol. Primary examples of hydrocarbons are terpenes and balms. Preferably however, mixtures of several fragrant compounds are employed, together resulting in a preferred aroma. In addition, etheric oils of low volatility, are suitable perfume oils. Examples of these are sage oil, camille oil, clove oil, balm mint oil, mint oil, cinnamon oil, linden-blossom oil, juniper oil, vetiver oil, olibanum oil, galbanum oil, labolanum oil and lavender oil. Preferred are bergamot oil, dihydromyrcenol, linal, lyral, citronellol, phenylethyl alcohol,  $\alpha$ -hexylcinnamon aldehyde, geraniol, benzylacetone, cyclamen aldehyde, linalool, boisambrene forte, ambroxan, indol, hedione, sandelice, citron-oil, mandarin-oil, orange-oil, allylamylglycolate, cyclovertal, lavender-oil, muscate sage-oil,  $\beta$ -damascone, geranium-oil bourbon, cyclohexylsalicylate, vertofix coeur, iso-E-super, fixolide NP, evemyl, iraldein gamma, phenyl-acetic acid, geranyl acetate, benzyl acetate, rose-oxide, romilate, irotyl and floramate, either employed alone or in a mixture.

Suitable colorants are any colorants that are suitable for cosmetic purposes, as for example mentioned in the publication "Kosmetische Farbmittel" der Farbstoff-kommission der Deutschen Forschungsgemeinschaft, Verlag Chemie, Weinheim, 1984, S. 81-16". Such colorants are usually employed in concentrations varying from 0.001 to 0.1 % w/w based on the weight of the composition.

The total amount of additives can vary from 1 to 50 preferably from 5 to 40 % w/w based on the weight of the composition.

The balance of the composition will generally be made up by water. Optionally, a small amount of an alcohol, such as ethanol or isopropanol may be present, e.g. to achieve a disinfecting effect. Water will typically be present

in an amount ranging from 50 to 95 wt.%, based on the weight of the composition.

The compositions can be prepared according to the usual cool or heated processes; a preferred method of preparation is a phase-inversion temperature method.

Dependent on the chosen ingredients of the composition as set forth above, a cosmetics composition according to the invention may find application as a sun cream or lotion, body milk, shampoo, bathing or shower gel, hair care product, deodorant or moisturizing cream. If desired, the present composition may also be employed in a pharmaceutical setting, for instance as an ointment. In such a case, the composition will further comprise a pharmaceutically active agent or a bioactive agent.

The invention will now be elucidated by the following, non-restrictive examples.

#### Example 1

A composition was prepared of the following ingredients in the following amounts (wt.%):

20	- Surfactants:	Magnesium Laureth Sulfate (1)	11.43
		Lauryl Glucoside (2)	5.19
	- pH regulator:	Citric acid	0.11
	- Preservative:	Kathon CG	0.06
	- Thickener:	Xanthan gom	0.80
25	- Moisturizing agent:	Glycerin	5.00
	- Emollient:	Cetiol HE	2.00
	- Conditioning agent:	Merquat Plus 3331	1.00
	- Perfume		1.00
	- Coloring agent:	Patentblue V E 131	0.0015
30	- Water		Balance

The composition was prepared by first adding the water to a vessel. Next, in subsequent order, the preservative and the thickener were added. These components were mixed and homogenized until the thickener was swollen and fully dispersed. To the obtained dispersion, the surfactants were added separately with mixing to fully disperse the surfactant after each



addition. The remaining ingredients, except the citric acid, were then added and mixing was continued until all were fully dispersed. Finally, the pH was adjusted by addition of the citric acid.

This composition was then cooled to below 10°C. The propellant to be added, isopentane, was also cooled to said temperature. The composition and the propellant were mixed with one another while taking care that no air was incorporated at constant temperature. The propellant was added in an amount to finally reach a concentration of 6 wt.%, with respect to the total weight of the final composition. After thorough mixing, the composition was allowed to warm up and brought into a suitable plastic container while still having a temperature below 20°C.

### Example 2

Six compositions were prepared. Three were in accordance with the present invention (A, B, C), and three were not (CA, CB, CC). For the preparation of the compositions, a surfactant mixture comprising a thickener was mixed with pentane at a pH of 5.5-6.5. The viscosities were measured using the Brookfield method at 23°C ('Spindel TE', 5 rpm) in mPas. The results are shown in Table 1.

Table 1: Gels of surfactant mixtures (amounts in weight percentages)

Composition	A	B	C	CA	CB	CC
Texapon® N70 Sodium Laureth Sulfate	8	8	4	8	8	4
Plantacare® 818 Coco-Glucosid	1	-	1	1	-	1
Dehyton® K Cocoamidopropylbetain	1	1	1	1	1	1
Glyceryl-PEG-140- tristearate	4	4	4	4	4	4
Pentane	6	6	6	-	-	-
Water	ad 100					
Viscosity						
- 1 hour	30,500	25,000	34,000	3000	3200	2900
- 4 weeks	29,600	27,000	34,500	2700	2800	2600

## Claims

1.           Cosmetics composition comprising a thickener, a propellant, a surfactant and water, wherein the composition is contained in a container under a pressure of no more than 3 bar.
2.           Composition according to claim 1, wherein the pressure is no more  
5           than 2 bar.
3.           Composition according to claim 1 or 2, wherein the container is a plastic container.
4.           Composition according to any of the claims 1-3, wherein said composition comprises at least two surfactants and a hydrophobic compound  
10           having a HLB-value of less than 10 wherein said composition further has a viscosity according to Brookfield (23°C, Spindle TE, 5 RPM) of in the range of 5,000 to 50,000 mPas.
5.           Composition according to any of the preceding claims, wherein the propellant is a hydrocarbon having from 4 to 7 carbon atoms.
- 15          6.           Composition according to claim 5, wherein the propellant is isopentane.
7.           Composition according to any of the preceding claims, comprising from 0.01 to 30 wt.% of thickener, from 1 to 15 wt.% of propellant, from 0.5 to 50 wt.% of surfactant and the balance being water and other customary body  
20           care ingredients.
8.           Composition according to any of the preceding claims, wherein the thickener is chosen from the group of gums, poly(meth)acrylates, polymers based upon aerosil-types, polysaccharides, high molecular polyethyleneglycolmono- and diesters of fatty acids, polyacrylamides,  
25           polyvinylalcohols, polyvinylpyrrolidons, esters of fatty acids with polyols, fatty alcoholethoxylates, alkyloligoglucosides and sugar-esters.
9.           Composition according to claim 8, wherein the thickener is chosen from xanthan gom, guar-guar, agar-agar alginates, tyloses, carboxymethylcellulose, hydroxyethylcellulose.
- 30          10.           Composition according to any of the preceding claims further comprising one or more ingredients chosen from the group of pH regulating agents, oil bodies, emulsifying agents, preservatives, perfumes, moisturizing agents, UV-filters, emollients, superfatting agents, brighteners, strength

improving agents, silicon agents, fats, waxes, lecithins, phospholipids, stabilizing agents, anti-bacterial agents and other bioactive agents, odor-absorbing agents, antiperspirants, antidandruff agents, film-forming agents, swelling agents, antioxidants, insect-repellents, hydrotropes, tanning agents, tyrosin inhibitors, solubilizers and colorants.

11. Composition according to any of the preceding claims, wherein said composition comprises a fatty alcohol preferably of the formula  $R_1OH$ ,  $R_1$  being a aliphatic hydrocarbon group containing 6 to 22 carbon atoms and 0,1,2, or 3 double bonds.

12. Composition according to any of the preceding claims, wherein said composition comprises a fatty alcoholalkoxylate preferably of the formula  $R_2O(AlkO)_mH$ ,  $R_2$  being an aliphatic hydrocarbon group containing 6 to 22 carbon atoms,  $m$  being an integer from 1 to 30 and  $AlkO$  being an alkyleneoxide.

13. Composition according to any of the preceding claims, wherein said composition comprises a fatty alcoholalkoxylate of the formula  $R_2O(AlkO)_mH$ ,  $R_2$  being an aliphatic hydrocarbon group containing 8 to 22 carbon atoms,  $m$  being an integer from 5 to 20 and  $AlkO$  being chosen from ethyleneoxide and propylene oxide.

14. Composition according to any of the claim 4 to 13, wherein the viscosity according to Brookfield (23°C, Spindle TE, 5 RPM) of said composition is in the range of 10,000 to 50,000, preferably in the range of 20,000 to 30,000 mPas.

15. Composition according to any of the preceding claims wherein said composition is a gel.

16. Composition according to any of the preceding claims wherein said composition comprises:

- a) 0.01 to 30 % w/w of a thickener,
- b) 0.1 to 20 % w/w of a hydrophobic compound having an HLB value of less than 10,
- c) 0.5 to 40 % anionic surfactants,
- d) 0.25 to 5 % amphoteric surfactants, and/or
- e) 0.5 to 40 % nonionic surfactants,

and is further characterized by the composition having a viscosity of 5,000 to 50,000 mPas and the weight ratio of components c:d or c:e being in the range of 2:1 to 8:1.

5 17. Container comprising a cosmetics composition according to any of the preceding claims.

18. Use of a composition according to any of the claims claim 1-16 as a sun cream or lotion, body milk, shampoo, bathing or shower gel, ointment, deodorant, hair care product or moisturizing cream.

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For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: COSMETICS COMPOSITION

(57) Abstract: The invention relates to a cosmetics composition comprising a thickener, a propellant, a surfactant and water, wherein the composition is contained in a container under a pressure of no more than 3 bar.

WO 01/15659 A2

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>P51808PC00</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/NL 00/ 00599</b>	International filing date (day/month/year) <b>29/08/2000</b>	(Earliest) Priority Date (day/month/year) <b>30/08/1999 .</b>
Applicant <b>SARA LEE/DE N.V.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.  
☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

**4. With regard to the title,**

- ☐ the text is approved as submitted by the applicant.
- ☒ the text has been established by this Authority to read as follows:

**AQUEOUS LOW PRESSURE COSMETIC COMPOSITION COMPRISING A PROPELLANT, A THICKENER AND A SURFACTANT**

**5. With regard to the abstract,**

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

**6. The figure of the drawings to be published with the abstract is Figure No.**

- ☐ as suggested by the applicant.
- ☐ because the applicant failed to suggest a figure.
- ☐ because this figure better characterizes the invention.
- ☒ None of the figures.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/NL 00/00599

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K7/32 A61K7/16 A61K7/15 A61K7/11 A61K7/06  
A61K7/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, CHEM ABS Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 902 225 A (MONSON JAMES A) 11 May 1999 (1999-05-11)  column 7, line 24 - line 56; claims 1,6-8,13,14,27,28,31-33; examples ---	1-3, 5-10,14, 15,17,18
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

\*A\* document defining the general state of the art which is not considered to be of particular relevance

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\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

13 February 2001

Date of mailing of the international search report

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Minas, S

# INTERNATIONAL SEARCH REPORT

International Application No

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 541 581 A (MONSON JAMES A) 17 November 1970 (1970-11-17)  column 13, line 69 - line 71; claims; examples; tables column 6, line 50 - column 7, line 42 ---	1,2,5, 7-11,15, 17,18
X	US 4 753 747 A (CLARK KENNETH F ET AL) 28 June 1988 (1988-06-28)  column 6, line 19 - line 28 column 14, line 16 - line 19; claims 14,19; example 9 ---	1,2, 5-13,15, 17,18
X	EP 0 919 219 A (WELLA AG) 2 June 1999 (1999-06-02)  claims 1,7,8; examples 6,13,14 ---	1,5,7,8, 10,12, 13,15,18
X	DE 43 15 405 A (WELLA AG) 10 November 1994 (1994-11-10) examples 3,4 ---	1,2,5, 8-10,18
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